Malaysia
Solar Photovoltaic
Market Overview

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MALAYSIAN PHOTOVOLTAIC INDUSTRY ASSOCIATION
Background

The **Malaysian Photovoltaic Industry Association (MPIA)**, **established in 2006**, is a non-profit organisation recognised by the Ministry of Energy, Green Technology and Water (KeTTHA).

MPIA is a **credible and representative platform** for the Malaysian Solar Industry.

We are the **trusted voice of the industry** within the Government Agencies.

We have more than **100 members** from across the solar supply chain including local and foreign manufacturers, service providers, system integrators, consultants, insurance provider, training providers, developers and solar farm owners.
MPIA provides Training for local and international delegates

<table>
<thead>
<tr>
<th>NO.</th>
<th>TRAINING</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solar PV Systems Essential – Batch 4</td>
<td>11-12 February 2017</td>
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<td>2</td>
<td>PV Performance &amp; Quality Test Course – Batch 2</td>
<td>16-17 March 2017</td>
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<td>3</td>
<td>Solar PV Systems Essential – Batch 5</td>
<td>4-5 May 2017</td>
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<td>4</td>
<td>Introduction to Solar Monitoring Systems</td>
<td>18 July 2017</td>
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<td>5</td>
<td>Solar PV Systems Essential – Batch 6</td>
<td>9-10 August 2017</td>
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<td>6</td>
<td>Solar PV Systems Essential – Batch 7</td>
<td>13-14 September 2017</td>
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<td>7</td>
<td>SEDA GCPV Seminar</td>
<td>25 September 2017</td>
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<td>8</td>
<td>PV Performance &amp; Quality Test Course – Batch 3</td>
<td>9-10 October 2017</td>
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<td>9</td>
<td>Solar PV Systems Essential (In House Training)</td>
<td>26-27 October 2017</td>
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<tr>
<td>10</td>
<td>PV Performance &amp; Quality Test Course (In House Training)</td>
<td>16-17 November 2017</td>
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<tr>
<td>11</td>
<td>Solar PV Project Development in Malaysia: Project Finance &amp; Bankability</td>
<td>22 November 2017</td>
</tr>
</tbody>
</table>
Solar PV Trainings
MPIA Publication

• Home Owner’s Guide to Investing in Solar PV Systems
• MPIA SURIA Directory 2015/2016
• MPIA SURIA Magazine 2017/2018
To excel in Solar Business in Malaysia, MPIA is the window to these important Malaysia Government Agencies and Authorities.

- Suruhanjaya Tenaga
  Energy Commission
- Green Tech
MALAYSIA
- Seda
Sustainable Energy Development Authority
- Kementerian Tenaga, Teknologi Hijau dan Air
- MIDAX
Malaysian Investment Development Authority
- Tenaga Nasional
Better. Brighter.
Join MPIA as a member today

• Membership Benefit:
  • Training Discount up to 15%
  • Newsletter, Industrial update to your mail box
  • Solar Industry Updates
  • Exhibition & Conferences Discount
  • Quarterly High-Tea Session with Speakers from Government Agencies
  • Company Profile displayed in MPIA website
  • Company Logo displayed at MPIA booth in various exhibition
  • Networking with Solar Industry Players
  • Be the Industry Voice that Increase Visibility & Credibility

• Whatsapp/Wechat +60-12-3220816 K.K.Kong to join
Comparative Advantage of Investing in Malaysia Solar Business

Domestic market driven by national PV installation targets

**China**
- 14.4GW/43.1GW
- Government policy
- Commitment to RE & climate change
- Subsidy and cheap loan
- Scale
- Tech innovation
- Huge market

**Japan**
- 9 GW / 32.3 GW
- Government policy commitment to PV
- FIT
- Green Tax Credit
- Big market

**UK**
- 3.2GW/8.7 GW
- Government policy
- FIT
- Green Bank

**Germany**
- 2.5GW/40.7 GW
- FIT
- Government policy
- Cheap soft loan
- Technology
- Lack of scale

**USA**
- 8.4GW/24.1 GW
- Investment Tax credit
- FIT, NEM and RPS
- Supply restrictions from the trade disputes
- Tech innovation
- Main driver - climate change
- Growing local market

**India**
- 1.9GW/5.1GW
- Government commitment to RE & climate change
- FIT
- Subsidy and foreign loan
- Big market

**Thailand**
- 1.5GW/2.8GW
- Government policy commitment to PV
- Growing local market - large scale utility & rooftop
- FIT/adder

**Malaysia**
- 0.022GW/0.225 GW
- Government policy
- Attractive FDI incentive/tax
- FIT, market policy support
- Trainable workforce and competitive pay for skilled engineers, machinery operators
- Access to global demand

- Lower cost and good engineering play
- Cost-competitiveness
- Relatively small market
- Fairly high finance cost
Solar PV Supply Chain in Malaysia

The PV cluster mapping in Malaysia provides a holistic approach in building a cost-competitive, sustainable industry
Many policy makers, regulators, manufacturers, system integrators, building experts, education and training providers and financial institutions contributed to the industries growth.

Solar PV Stakeholders in Malaysia

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**Renewable Energy Development in Malaysia**

**8th Malaysia Plan (2001 – 2005)**
- RE introduced as the 5th Fuel
- Implied 5% RE in energy mix

**9th Malaysia Plan (2006 – 2010)**
- Targeted RE capacity to be connected to power uBlity grid: 300 MW – Peninsular Malaysia; 50 MW - Sabah
- Connected to the uBlity grid: 61.2MW (17% from 9th MP target through Small Renewable Energy Programme (SREP))

**10th Malaysia Plan (2011-2015)**
- RE Act introduced.
- Achieved total of 377MW RE installed capacity (FiT)
- 2015: Energy mix 43% coal, 40% gas, 14% large hydro, 2% RE, 1% oil

**11th Malaysia Plan (2016-2020)**
- Target energy mix of 53% coal, 29% gas, 15% large hydro, 3% RE.
- Target RE (FiT) capacity of 2,080 MW ( * Programme end 2017 )
- Introduced Large Scale Solar @ Mar 2016 and Net Energy Metering (NEM) programmes @ Nov2016
### Large Scale Solar

**Tenure:** 2017-2020

**Capacity:**
- 1000 MWac (Open bidding)
- 250 MWac (Fast Track Projects)

**Feed In Tariff:** 2012-2017

**ITA & ITE**
- Investment Tax Allowance
- Income Tax Exemption

**GTFS:** RM3.5bil allocation * 2% of the total interest charged by government

### Self Consumption

**Tenure:** under existing ESA

**Capacity:** Depend on demand

**Feed In Tariff:** 2016-2020

**ITA & ITE**
- 2013 -2020

**GTFS 2.0**
- 2018 to 2022
- RM5bil allocation
The Eleventh Malaysia Plan (2016-2020)

- To adopt more renewable energy sources to reduce carbon emission

Exhibit 6-4
Renewable energy installed capacity by sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Total Installed Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biogas</td>
<td>5%</td>
</tr>
<tr>
<td>Biomass</td>
<td>23%</td>
</tr>
<tr>
<td>Solar photovoltaic</td>
<td>66%</td>
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<tr>
<td>Mini hydro</td>
<td>6%</td>
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</tbody>
</table>

2014

Total Installed Capacity

<table>
<thead>
<tr>
<th>Source</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Solid waste</td>
<td>17%</td>
</tr>
<tr>
<td>Solar photovoltaic</td>
<td>9%</td>
</tr>
<tr>
<td>Mini hydro</td>
<td>24%</td>
</tr>
<tr>
<td>Biogas</td>
<td>12%</td>
</tr>
<tr>
<td>Biomass</td>
<td>38%</td>
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</table>

Source: Sustainable Energy Development Authority and Economic Planning Unit

National RE Goals (excl EPP-10)

<table>
<thead>
<tr>
<th>Year</th>
<th>Solar Pv</th>
<th>Solid Waste</th>
<th>Mini Hydro</th>
<th>Biogas</th>
<th>Biomass</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>985 MW (6%)</td>
<td>11.3 GWh (9%)</td>
<td>5.4 GWh (5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>2,080 MW (11%)</td>
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<tr>
<td>2030</td>
<td>4,000 MW (17%)</td>
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<tr>
<td>2050</td>
<td>21.4 GW (73%)</td>
<td></td>
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<tr>
<td></td>
<td>44.2 GWh (24%)</td>
<td></td>
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</tbody>
</table>

Year
Malaysia Government Green Tax Incentive

**Tax Incentives for Green Technology**

The government provides incentives in the form of investment tax allowance for the purchase of green technology assets and income tax exemption, for the use of green technology services and systems. These incentives cover a range of green technology activities in the area of energy, transportation, building, waste management, and supporting services activities.

**Green Technology Projects**

Investment Tax Allowance (ITA) of 100% of qualifying capital expenditure incurred on a green technology project from the year of assessment 2013 (date on which the first qualifying capital expenditure incurred should not be earlier than 25 October 2013) until the year of assessment 2020. The allowance can be offset against 70% of statutory income in the year of assessment. Unutilised allowances can be carried forward until they are fully absorbed. Green technology projects related to renewable energy, energy efficiency, green buildings, green data centres, and waste management can qualify for this tax incentive.

**Purchase of Green Technology Assets**

ITA of 100% of qualifying capital expenditure incurred on green technology assets from the year of assessment 2013 (date on which the first qualifying capital expenditure incurred should not be earlier than 25 October 2013) until the year of assessment 2020. The allowance can be offset against 70% of statutory income in the year of assessment. Unutilised allowances can be carried forward until they are fully absorbed.

**Green Technology Services**

Income tax exemption of 100% of statutory income from the year of assessment 2013 until the year of assessment 2020. Green technology services related to renewable energy, energy efficiency, electric vehicles (EV), green buildings, green data centres, green certification and verification, and green townships can qualify for this tax incentive.
Inventives Tax Allowance

Eligible companies
• Companies that undertake investments in a specific projects that promotes sustainability and green environment
• Either for own use or business purposes

Incentive
• Investment Tax Allowance (ITA) of 100% of qualifying capital expenditure incurred from YA 2013 until the YA 2020
• The ITA can be utilised to offset against 70% of statutory income
Malaysia Solar Irradiance Map

- Electricity Tariff of Malaysia
- 0.4410 MYR/kWh = approx. 0.11USD/kWh
Electricity Consumer in Malaysia

**Electricity Tariff of Malaysia**

0.4410 MYR/kWh  
= approx. 0.11 USD/kWh

Source: TNB Annual Report 2016
Malaysia Solar History

Self Consumption
SELCO - Present

Net Energy Metering
NEM - Present

Large Scale Solar
LSS - Present

MALAYSIA’S SOLAR HISTORY

Beginnings of Solar
1980’s

SURIA 1000
2007 - 2011

Feed-in Tariff
FiT
2012 - 2016
Look forward to work together to grow the Solar Industry together!

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Thank you very much!